

Southern Turners Project Sheet

Racing Car



This project explains one way of how to make a toy racing car. It should serve to stimulate your imagination as the starting point for better and grander models.

Ensure all safety equipment is used appropriately.

Car Body



Select a spindle blank approximately 200 mm long by 45-50 mm square. At least two faces need to be at right angles to each other; use these faces to ensure drilled holes are perpendicular to each other. Accurately locate and using an awl or other suitable tool mark the centres of both ends.



Determine the diameter of the dowel to be used as axles, in this case it was 12.7 mm. Drill two holes slightly larger than the axle diameter 50 mm in from both ends and 20 mm from one edge as shown in the photo.



Using a Forstner bit or other clean cutting device drill one (single seater) or two (driver and passenger) 25 mm diameter by 18 to 20 mm deep holes in the face at right angles to the previously drilled holes taking care that they do not intersect with the other holes..



Reduce blank to a cylinder and commence shaping the rear of the body. Note that the curve does not have to go all the way to the centre. You will see why later in this instruction.



Reverse the blank between centres to make it easier to shape the front of the car body. Shape to body as per your own design. Once again the curve does not need to go to the centre of the blank.



Sand up to 400 grit finishing by hand sanding along the grain. This is best done off the lathe. Apply the finish of your choice.

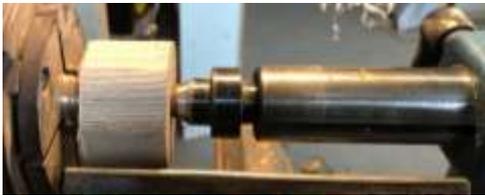


Shape the nose and rear of the body as you wish. This can be done on a linisher, belt sander or using a file etc. Apply the finish of your choice.

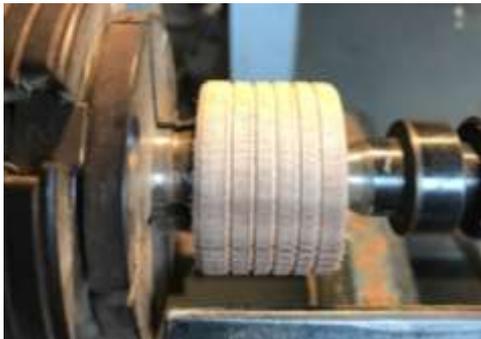
Wheels and axles



Prepare four wheel blanks of approximately 50 mm diameter. Thickness is up to you. The ones in the photo are 32 mm thick – one was cut in two to produce narrower front wheels.

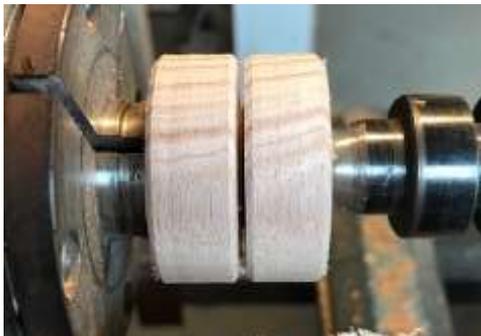


Mount against the jaws of a scroll chuck and a live centre to give access across the entire face of the blank. If you do not have jaws small enough make a wooden face plate out of scrap timber to achieve the same result. A friction hold is all that is needed for this operation. It is best to avoid centre holes in both sides of the wheel.



Reduce to round (in this case approximately 48 mm diameter) and using a thin parting tool or skew chisel on its side cut some shallow grooves to represent tyre tread.

Sand to 400 grit.



Making two wheels from the one blank. Possibly not a good idea as the front and back wheels are not necessarily in the correct proportions – you decide.

Using the indentation made by the live centre drill a blind hole the same diameter as the axle in each wheel. This can be done on the lathe or on a drill press.

Front wheels can be slightly smaller diameter than the rear wheels.



Axles are simply pieces of dowel cut to length. Length is determined by a trial and error process ie cut over length then fit wheels and axles to car body and keep reducing the length until it looks right.

Note that the trial fit indicated the axles did not rotate freely in the body so the centres were reduced to a smaller diameter.

The axles must be free to rotate within the body.

A 3 x 3 mm groove has been cut at the centre point of both axles.



Stain, dye or paint the wheels and axles black.

Finish with lacquer, oil or liquid poly.

Assemble the body, wheels and axles by placing a small dab of glue in the hole in each wheel and clamp until dry.

Carefully drill holes through the underside of the body to match the recess cut in the axles and insert pins in the form of nails to prevent sideward movement of the axle assembly. This step can be deleted if you want but the wheels will rub against the side of the body.

Driver and Passenger



Mount a spindle blank with a diameter slightly larger than 25 mm in a suitable scroll chuck and reduce to round..



The body of the driver/passenger should be a neat but not tight fit in the driver's seat. The curve defining the neck should occur above the level of the car body. The shape of the figure's head is up to you. Use your imagination. ‘

Sand through the grits.

Finish with lacquer, oil or liquid poly.



The finished racing car.

Body is native pine/cypress – lung protection is a necessity if working with this wood.

Wheels are tas oak or mountain ash.

Driver and passenger are from red gum.

If there is a possibility that this toy will be used by children under three years of age glue the driver and passengers into their seats otherwise they constitute a swallowing hazard.